



C4

1

SEQUENCE LISTING

RECEIVED  
MAY 22 2003  
TECH CENTER 1600/2900

<110> Azpiroz, Ricardo  
Choe, Sunghwa  
Feldmann, Kenneth A.

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Leu	Ala	Val	Lys	Phe	Leu	Thr	Glu	Thr	Pro	Leu	Ala	Leu	Ala	Gln	Leu
	290					295					300				
Lys	Glu	Glu	His	Glu	Lys	Ile	Arg	Ala	Met	Lys	Ser	Asp	Ser	Tyr	Ser
305				310						315				320	
Leu	Glu	Trp	Ser	Asp	Tyr	Lys	Ser	Met	Pro	Phe	Thr	Gln	Cys	Val	Val
			325					330					335		
Asn	Glu	Thr	Leu	Arg	Val	Ala	Asn	Ile	Ile	Gly	Gly	Val	Phe	Arg	Arg
		340					345					350			
Ala	Met	Thr	Asp	Val	Glu	Ile	Lys	Gly	Tyr	Lys	Ile	Pro	Lys	Gly	Trp
	355						360					365			
Lys	Val	Phe	Ser	Ser	Phe	Arg	Ala	Val	His	Leu	Asp	Pro	Asn	His	Phe
	370					375					380				
Lys	Asp	Ala	Arg	Thr	Phe	Asn	Pro	Trp	Arg	Trp	Gln	Ser	Asn	Ser	Val
385				390					395					400	
Thr	Thr	Gly	Pro	Ser	Asn	Val	Phe	Thr	Pro	Phe	Gly	Gly	Gly	Pro	Arg
			405					410					415		
Leu	Cys	Pro	Gly	Tyr	Glu	Leu	Ala	Arg	Val	Ala	Leu	Ser	Val	Phe	Leu
		420					425					430			
His	Arg	Leu	Val	Thr	Gly	Phe	Ser	Trp	Val	Pro	Ala	Glu	Gln	Asp	Lys
	435						440					445			



Leu Val Phe Phe Pro Thr Thr Arg Thr Gln Lys Arg Tyr Pro Ile Phe  
 450 455 460  
 Val Lys Arg Arg Asp Phe Ala Thr  
 465 470

<210> 20  
 <211> 464  
 <212> PRT  
 <213> Lycopersicon esculentum

<400> 20  
 Met Ala Phe Phe Leu Ile Phe Leu Ser Ser Phe Phe Gly Leu Cys Ile  
 1 5 10 15  
 Phe Cys Thr Ala Leu Leu Arg Trp Asn Gln Val Lys Tyr Asn Gln Lys  
 20 25 30  
 Asn Leu Pro Pro Gly Thr Met Gly Trp Pro Leu Phe Gly Glu Thr Thr  
 35 40 45  
 Glu Phe Leu Lys Leu Gly Pro Ser Phe Met Lys Asn Gln Arg Ala Arg  
 50 55 60  
 Tyr Gly Ser Phe Phe Lys Ser His Ile Leu Gly Cys Pro Thr Ile Val  
 65 70 75 80  
 Ser Met Asp Ser Glu Leu Asn Arg Tyr Ile Leu Val Asn Glu Ala Lys  
 85 90 95  
 Gly Leu Val Pro Gly Tyr Pro Gln Ser Met Ile Asp Ile Leu Gly Lys  
 100 105 110  
 Cys Asn Ile Ala Ala Val Asn Gly Ser Ala His Lys Tyr Met Arg Gly  
 115 120 125  
 Ala Leu Leu Ser Leu Ile Ser Pro Thr Met Ile Arg Asp Gln Leu Leu  
 130 135 140  
 Pro Lys Ile Asp Glu Phe Met Arg Ser His Leu Thr Asn Trp Asp Asn  
 145 150 155 160  
 Lys Val Ile Asp Ile Gln Glu Lys Thr Asn Lys Met Ala Phe Leu Ser  
 165 170 175  
 Ser Leu Lys Gln Ile Ala Gly Ile Glu Ser Thr Ser Leu Ala Gln Glu  
 180 185 190  
 Phe Met Ser Glu Phe Phe Asn Leu Val Leu Gly Thr Leu Ser Leu Pro  
 195 200 205  
 Ile Asn Leu Pro Asn Thr Asn Tyr His Arg Gly Phe Gln Ala Arg Lys  
 210 215 220  
 Ile Ile Val Asn Leu Leu Arg Thr Leu Ile Glu Glu Arg Arg Ala Ser  
 225 230 235 240  
 Lys Glu Ile Gln His Asp Met Leu Gly Tyr Leu Met Asn Glu Glu Ala  
 245 250 255  
 Thr Arg Phe Lys Leu Thr Asp Asp Glu Met Ile Asp Leu Ile Ile Thr  
 260 265 270  
 Ile Leu Tyr Ser Gly Tyr Glu Thr Val Ser Thr Thr Ser Met Met Ala  
 275 280 285  
 Val Lys Tyr Leu His Asp His Pro Lys Val Leu Glu Glu Leu Arg Lys  
 290 295 300  
 Glu His Met Ala Ile Arg Glu Lys Lys Lys Pro Glu Asp Pro Ile Asp  
 305 310 315 320  
 Tyr Asn Asp Tyr Arg Ser Met Arg Phe Thr Arg Ala Val Ile Leu Glu  
 325 330 335  
 Thr Ser Arg Leu Ala Thr Ile Val Asn Gly Val Leu Arg Lys Thr Thr  
 340 345 350  
 Gln Asp Met Glu Ile Asn Gly Tyr Ile Ile Pro Lys Gly Trp Arg Ile  
 355 360 365

Tyr	Val	Tyr	Thr	Arg	Glu	Leu	Asn	Tyr	Asp	Pro	Arg	Leu	Tyr	Pro	Asp
370						375					380				
Pro	Tyr	Ser	Phe	Asn	Pro	Trp	Arg	Trp	Met	Asp	Lys	Ser	Leu	Glu	His
385					390					395					400
Gln	Asn	Ser	Phe	Leu	Val	Phe	Gly	Gly	Gly	Thr	Arg	Gln	Cys	Pro	Gly
				405					410					415	
Lys	Glu	Leu	Gly	Val	Ala	Glu	Ile	Ser	Thr	Phe	Leu	His	Tyr	Phe	Val
			420					425					430		
Thr	Lys	Tyr	Arg	Trp	Glu	Glu	Ile	Gly	Gly	Asp	Lys	Leu	Met	Lys	Phe
		435					440					445			
Pro	Arg	Val	Glu	Ala	Pro	Asn	Gly	Leu	Arg	Ile	Arg	Val	Ser	Ala	His
	450					455					460				

&lt;210&gt; 21

&lt;211&gt; 444

&lt;212&gt; PRT

&lt;213&gt; Synechocystis sp.

&lt;400&gt; 21

Met	Ile	Thr	Ser	Pro	Thr	Asn	Leu	Asn	Ser	Leu	Pro	Ile	Pro	Pro	Gly
1				5					10					15	
Asp	Phe	Gly	Leu	Pro	Trp	Leu	Gly	Glu	Thr	Leu	Asn	Phe	Leu	Asn	Asp
			20					25					30		
Gly	Asp	Phe	Gly	Lys	Lys	Arg	Gln	Gln	Gln	Phe	Gly	Pro	Ile	Phe	Lys
		35				40						45			
Thr	Arg	Leu	Phe	Gly	Lys	Asn	Val	Ile	Phe	Ile	Ser	Gly	Ala	Leu	Ala
	50					55					60				
Asn	Arg	Phe	Leu	Phe	Thr	Lys	Glu	Gln	Glu	Thr	Phe	Gln	Ala	Thr	Trp
65					70					75					80
Pro	Leu	Ser	Thr	Arg	Ile	Leu	Leu	Gly	Pro	Asn	Ala	Leu	Ala	Thr	Gln
				85					90					95	
Met	Gly	Glu	Ile	His	Arg	Ser	Arg	Arg	Lys	Ile	Leu	Tyr	Gln	Ala	Phe
			100					105					110		
Leu	Pro	Arg	Thr	Leu	Asp	Ser	Tyr	Leu	Pro	Lys	Met	Asp	Gly	Ile	Val
		115					120					125			
Gln	Gly	Tyr	Leu	Glu	Gln	Trp	Gly	Lys	Ala	Asn	Glu	Val	Ile	Trp	Tyr
	130					135					140				
Pro	Gln	Leu	Arg	Arg	Met	Thr	Phe	Asp	Val	Ala	Ala	Thr	Leu	Phe	Met
145					150					155					160
Gly	Glu	Lys	Val	Ser	Gln	Asn	Pro	Gln	Leu	Phe	Pro	Trp	Phe	Glu	Thr
				165					170					175	
Tyr	Ile	Gln	Gly	Leu	Phe	Ser	Leu	Pro	Ile	Pro	Leu	Pro	Asn	Thr	Leu
		180						185					190		
Phe	Gly	Lys	Ser	Gln	Arg	Ala	Arg	Ala	Leu	Leu	Leu	Ala	Glu	Leu	Glu
		195				200						205			
Lys	Ile	Ile	Lys	Ala	Arg	Gln	Gln	Gln	Pro	Pro	Ser	Glu	Glu	Asp	Ala
	210					215					220				
Leu	Gly	Ile	Leu	Leu	Ala	Ala	Arg	Asp	Asp	Asn	Asn	Gln	Pro	Leu	Ser
225					230				235						240
Leu	Pro	Glu	Leu	Lys	Asp	Gln	Ile	Leu	Leu	Leu	Leu	Phe	Ala	Gly	His
				245					250					255	
Glu	Thr	Leu	Thr	Ser	Ala	Leu	Ser	Ser	Phe	Cys	Leu	Leu	Leu	Gly	Gln
		260						265					270		
His	Ser	Asp	Ile	Arg	Glu	Arg	Val	Arg	Gln	Glu	Gln	Asn	Lys	Leu	Gln
		275					280					285			
Leu	Ser	Gln	Glu	Leu	Thr	Ala	Glu	Thr	Leu	Lys	Lys	Met	Pro	Tyr	Leu
	290					295					300				

Asp Gln Val Leu Gln Glu Val Leu Arg Leu Ile Pro Pro Val Gly Gly  
 305 310 315 320  
 Gly Phe Arg Glu Leu Ile Gln Asp Cys Gln Phe Gln Gly Phe His Phe  
 325 330 335  
 Pro Lys Gly Trp Leu Val Ser Tyr Gln Ile Ser Gln Thr His Ala Asp  
 340 345 350  
 Pro Asp Leu Tyr Pro Asp Pro Glu Lys Phe Asp Pro Glu Arg Phe Thr  
 355 360 365  
 Pro Asp Gly Ser Ala Thr His Asn Pro Pro Phe Ala His Val Pro Phe  
 370 375 380  
 Gly Gly Gly Leu Arg Glu Cys Leu Gly Lys Glu Phe Ala Arg Leu Glu  
 385 390 395 400  
 Met Lys Leu Phe Ala Thr Arg Leu Ile Gln Gln Phe Asp Trp Thr Leu  
 405 410 415  
 Leu Pro Gly Gln Asn Leu Glu Leu Val Thr Pro Ser Pro Arg Pro  
 420 425 430  
 Lys Asp Asn Leu Arg Val Lys Leu His Ser Leu Met  
 435 440

<210> 22  
 <211> 519  
 <212> PRT  
 <213> Zea mays

<400> 22  
 Met Leu Gly Val Gly Met Ala Ala Ala Val Leu Leu Gly Ala Val Ala  
 1 5 10 15  
 Leu Leu Leu Ala Asp Ala Ala Arg Arg Ala His Trp Trp Tyr Arg  
 20 25 30  
 Glu Ala Ala Glu Ala Val Leu Val Gly Ala Val Ala Leu Val Val Val  
 35 40 45  
 Asp Ala Ala Ala Arg Arg Ala His Gly Trp Tyr Arg Glu Ala Ala Leu  
 50 55 60  
 Gly Ala Ala Arg Arg Ala Arg Leu Pro Pro Gly Glu Met Gly Trp Pro  
 65 70 75 80  
 Leu Val Gly Gly Met Trp Ala Phe Leu Arg Ala Phe Lys Ser Gly Lys  
 85 90 95  
 Pro Asp Ala Phe Ile Ala Ser Phe Val Arg Arg Phe Gly Arg Thr Gly  
 100 105 110  
 Val Tyr Arg Ser Phe Met Phe Ser Ser Pro Thr Val Leu Val Thr Thr  
 115 120 125  
 Ala Glu Gly Cys Lys Gln Val Leu Met Asp Asp Asp Ala Phe Val Thr  
 130 135 140  
 Gly Trp Pro Lys Ala Thr Val Ala Leu Val Gly Pro Arg Ser Phe Val  
 145 150 155 160  
 Ala Met Pro Tyr Asp Glu His Arg Arg Ile Arg Lys Leu Thr Ala Ala  
 165 170 175  
 Pro Ile Asn Gly Phe Asp Ala Leu Thr Gly Tyr Leu Pro Phe Ile Asp  
 180 185 190  
 Arg Thr Val Thr Ser Ser Leu Arg Ala Trp Ala Asp His Gly Gly Ser  
 195 200 205  
 Val Glu Phe Leu Thr Glu Leu Arg Arg Met Thr Phe Lys Ile Ile Val  
 210 215 220  
 Gln Ile Phe Leu Gly Gly Ala Asp Gln Ala Thr Thr Arg Ala Leu Glu  
 225 230 235 240  
 Arg Ser Tyr Thr Glu Leu Asn Tyr Gly Met Arg Ala Met Ala Ile Asn  
 245 250 255

Leu Pro Gly Phe Ala Tyr Arg Gly Ala Leu Arg Ala Arg Arg Arg Leu  
                   260                  265                  270  
 Val Ala Val Leu Gln Gly Val Leu Asp Glu Arg Arg Ala Ala Arg Ala  
                   275                  280                  285  
 Lys Gly Val Ser Gly Gly Gly Val Asp Met Met Asp Arg Leu Ile Glu  
                   290                  295                  300  
 Ala Gln Asp Glu Arg Gly Arg His Leu Asp Asp Asp Glu Ile Ile Asp  
 305                  310                  315                  320  
 Val Leu Val Met Tyr Leu Asn Ala Gly His Glu Ser Ser Gly His Ile  
                   325                  330                  335  
 Thr Met Trp Ala Thr Val Phe Leu Gln Glu Asn Pro Asp Met Phe Ala  
                   340                  345                  350  
 Arg Ala Lys Ala Glu Gln Glu Ala Ile Met Arg Ser Ile Pro Ser Ser  
                   355                  360                  365  
 Gln Arg Gly Leu Thr Leu Arg Asp Phe Arg Lys Met Glu Tyr Leu Ser  
                   370                  375                  380  
 Gln Val Ile Asp Glu Thr Leu Arg Leu Val Asn Ile Ser Phe Val Ser  
 385                  390                  395                  400  
 Phe Arg Gln Ala Thr Arg Asp Val Phe Val Asn Gly Tyr Leu Ile Pro  
                   405                  410                  415  
 Lys Gly Trp Lys Val Gln Leu Trp Tyr Arg Ser Val His Met Asp Pro  
                   420                  425                  430  
 Gln Val Tyr Pro Asp Pro Thr Lys Phe Asp Pro Ser Arg Trp Glu Gly  
                   435                  440                  445  
 His Ser Pro Arg Ala Gly Thr Phe Leu Ala Phe Gly Leu Gly Ala Arg  
                   450                  455                  460  
 Leu Cys Pro Gly Asn Asp Leu Ala Lys Leu Glu Ile Ser Val Phe Leu  
 465                  470                  475                  480  
 His His Phe Leu Leu Gly Tyr Lys Leu Ala Arg Thr Asn Pro Arg Cys  
                   485                  490                  495  
 Arg Val Arg Tyr Leu Pro His Pro Arg Pro Val Asp Asn Cys Leu Ala  
                   500                  505                  510  
 Lys Ile Thr Arg Val Gly Ser  
                   515

<210> 23  
 <211> 492  
 <212> PRT  
 <213> Danio rerio

<400> 23  
 Met Gly Leu Tyr Thr Leu Met Val Thr Phe Leu Cys Thr Ile Val Leu  
   1                  5                  10                  15  
 Pro Val Leu Leu Phe Leu Ala Ala Val Lys Leu Trp Glu Met Leu Met  
                   20                  25                  30  
 Ile Arg Arg Val Asp Pro Asn Cys Arg Ser Pro Leu Pro Pro Gly Thr  
                   35                  40                  45  
 Met Gly Leu Pro Phe Ile Gly Glu Thr Leu Gln Leu Ile Leu Gln Arg  
                   50                  55                  60  
 Arg Lys Phe Leu Arg Met Lys Arg Gln Lys Tyr Gly Cys Ile Tyr Lys  
 65                  70                  75                  80  
 Thr His Leu Phe Gly Asn Pro Thr Val Arg Val Met Gly Ala Asp Asn  
                   85                  90                  95  
 Val Arg Gln Ile Leu Leu Gly Glu His Lys Leu Val Ser Val Gln Trp  
                   100                  105                  110  
 Pro Ala Ser Val Arg Thr Ile Leu Gly Ser Asp Thr Leu Ser Asn Val  
                   115                  120                  125

His Gly Val Gln His Lys Asn Lys Lys Lys Ala Ile Met Arg Ala Phe  
 130 135 140  
 Ser Arg Asp Ala Leu Glu His Tyr Ile Pro Val Ile Gln Gln Glu Val  
 145 150 155 160  
 Lys Ser Ala Ile Gln Glu Trp Leu Gln Lys Asp Ser Cys Val Leu Val  
 165 170 175  
 Tyr Pro Glu Met Lys Lys Leu Met Phe Arg Ile Ala Met Arg Ile Leu  
 180 185 190  
 Leu Gly Phe Glu Pro Glu Gln Ile Lys Thr Asp Glu Gln Glu Leu Val  
 195 200 205  
 Glu Ala Phe Glu Glu Met Ile Lys Asn Leu Phe Ser Leu Pro Ile Asp  
 210 215 220  
 Val Pro Phe Ser Gly Leu Tyr Arg Gly Leu Arg Ala Arg Asn Phe Ile  
 225 230 235 240  
 His Ser Lys Ile Glu Asn Ile Arg Lys Lys Ile Gln Asp Asp Asp  
 245 250 255  
 Asn Glu Asn Glu Gln Lys Tyr Lys Asp Ala Leu Gln Leu Leu Ile Glu  
 260 265 270  
 Asn Ser Arg Arg Ser Asp Glu Pro Phe Ser Leu Gln Ala Met Lys Glu  
 275 280 285  
 Ala Ala Thr Glu Leu Leu Phe Gly Gly His Glu Thr Thr Ala Ser Thr  
 290 295 300  
 Ala Thr Ser Leu Val Met Phe Leu Gly Leu Asn Thr Glu Val Val Gln  
 305 310 315 320  
 Lys Val Arg Glu Glu Val Gln Glu Lys Val Glu Met Gly Met Tyr Thr  
 325 330 335  
 Pro Gly Lys Gly Leu Ser Met Glu Leu Leu Asp Gln Leu Lys Tyr Thr  
 340 345 350  
 Gly Cys Val Ile Lys Glu Thr Leu Arg Ile Asn Pro Pro Val Pro Gly  
 355 360 365  
 Gly Phe Arg Val Ala Leu Lys Thr Phe Glu Leu Asn Gly Tyr Gln Ile  
 370 375 380  
 Pro Lys Gly Trp Asn Val Ile Tyr Ser Ile Cys Asp Thr His Asp Val  
 385 390 395 400  
 Ala Asp Val Phe Pro Asn Lys Glu Glu Phe Gln Pro Glu Arg Phe Met  
 405 410 415  
 Ser Lys Gly Leu Glu Asp Gly Ser Arg Phe Asn Tyr Ile Pro Phe Gly  
 420 425 430  
 Gly Gly Ser Arg Met Cys Val Gly Lys Glu Phe Ala Lys Val Leu Leu  
 435 440 445  
 Lys Ile Phe Leu Val Glu Leu Thr Gln His Cys Asn Trp Ile Leu Ser  
 450 455 460  
 Asn Gly Pro Pro Thr Met Lys Thr Gly Pro Thr Ile Tyr Pro Val Asp  
 465 470 475 480  
 Asn Leu Pro Thr Lys Phe Thr Ser Tyr Val Arg Asn  
 485 490

<210> 24  
 <211> 504  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
 Met Ala Leu Ile Pro Asp Leu Ala Met Glu Thr Trp Leu Leu Leu Ala  
 1 5 10 15  
 Val Ser Leu Val Leu Leu Tyr Leu Tyr Gly Thr His Ser His Gly Leu  
 20 25 30

Phe	Lys	Lys	Leu	Gly	Ile	Pro	Gly	Pro	Thr	Pro	Leu	Pro	Phe	Leu	Gly
	35						40					45			
Asn	Ile	Leu	Ser	Tyr	His	Lys	Gly	Phe	Cys	Met	Phe	Asp	Met	Glu	Cys
	50					55					60				
His	Lys	Lys	Tyr	Gly	Lys	Val	Trp	Gly	Phe	Tyr	Asp	Gly	Gln	Gln	Pro
	65				70					75					80
Val	Leu	Ala	Ile	Thr	Asp	Pro	Asp	Met	Ile	Lys	Leu	Val	Leu	Val	Lys
				85					90					95	
Glu	Cys	Tyr	Ser	Val	Phe	Thr	Asn	Arg	Glu	Pro	Phe	Gly	Pro	Val	Gly
			100				105					110			
Phe	Met	Lys	Ser	Ala	Ile	Ser	Ile	Ala	Glu	Asp	Glu	Glu	Trp	Lys	Arg
	115						120					125			
Leu	Arg	Ser	Leu	Leu	Ser	Pro	Thr	Phe	Thr	Ser	Gly	Lys	Leu	Lys	Glu
	130					135					140				
Met	Val	Pro	Ile	Ile	Ala	Gln	Tyr	Gly	Asp	Val	Leu	Val	Arg	Asn	Leu
	145				150				155						160
Arg	Arg	Glu	Arg	Glu	Thr	Gly	Lys	Pro	Val	Thr	Leu	Lys	Asp	Val	Phe
				165					170					175	
Gly	Ala	Tyr	Ser	Met	Asp	Val	Ile	Thr	Ser	Ser	Ser	Phe	Gly	Val	Asn
			180				185					190			
Val	Asp	Ser	Leu	Asn	Asn	Pro	Gln	Asp	Pro	Leu	Val	Glu	Asn	Thr	Lys
	195						200					205			
Lys	Leu	Leu	Arg	Phe	Asp	Phe	Leu	Asp	Pro	Phe	Phe	Leu	Ser	Ile	Thr
	210					215					220				
Val	Phe	Pro	Phe	Leu	Ile	Pro	Ile	Leu	Glu	Val	Leu	Asn	Ile	Cys	Val
	225				230				235						240
Phe	Pro	Arg	Glu	Val	Thr	Asn	Phe	Leu	Arg	Lys	Ala	Val	Lys	Arg	Met
				245					250					255	
Lys	Glu	Ser	Arg	Leu	Glu	Asp	Thr	Gln	Lys	His	Arg	Val	Asp	Phe	Leu
		260					265					270			
Gln	Leu	Met	Ile	Asp	Ser	His	Lys	Asn	Ser	Lys	Glu	Thr	Glu	Ser	His
	275						280					285			
Lys	Ala	Leu	Ser	Asp	Leu	Glu	Leu	Val	Ala	Gln	Ser	Ile	Ile	Phe	Ile
	290					295				300					
Phe	Ala	Gly	Tyr	Glu	Thr	Ser	Ser	Val	Leu	Ser	Phe	Ile	Met	Tyr	
	305				310				315					320	
Glu	Leu	Ala	Thr	His	Pro	Asp	Val	Gln	Gln	Lys	Leu	Gln	Glu	Glu	Ile
				325					330					335	
Asp	Ala	Val	Leu	Pro	Asn	Lys	Ala	Pro	Pro	Thr	Tyr	Asp	Thr	Val	Leu
		340					345					350			
Gln	Met	Glu	Tyr	Leu	Asp	Met	Val	Val	Asn	Glu	Thr	Leu	Arg	Leu	Phe
	355					360						365			
Pro	Ile	Ala	Met	Arg	Leu	Glu	Arg	Val	Cys	Lys	Lys	Asp	Val	Glu	Ile
	370					375					380				
Asn	Gly	Met	Phe	Ile	Pro	Lys	Gly	Trp	Val	Val	Met	Ile	Pro	Ser	Tyr
	385				390				395						400
Ala	Leu	His	Arg	Asp	Pro	Lys	Tyr	Trp	Thr	Glu	Pro	Glu	Lys	Phe	Leu
			405						410					415	
Pro	Glu	Arg	Phe	Ser	Lys	Lys	Asn	Lys	Asp	Asn	Ile	Asp	Pro	Tyr	Ile
		420						425				430			
Tyr	Thr	Pro	Phe	Gly	Ser	Gly	Pro	Arg	Asn	Cys	Ile	Gly	Met	Arg	Phe
	435						440					445			
Ala	Leu	Met	Asn	Met	Lys	Leu	Ala	Leu	Ile	Arg	Val	Leu	Gln	Asn	Phe
	450					455				460					
Ser	Phe	Lys	Pro	Cys	Lys	Glu	Thr	Gln	Ile	Pro	Leu	Lys	Leu	Ser	Leu
	465				470				475						480
Gly	Gly	Leu	Leu	Gln	Pro	Glu	Lys	Pro	Val	Val	Leu	Lys	Val	Glu	Ser

Arg Asp Gly Thr Val Ser Gly Ala  
500

485

490

495

<210> 25  
<211> 575  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Consensus sequence

<221> VARIANT  
<222> (1)...(575)  
<223> Xaa = Any Amino Acid or No Amino Acid

&lt;400&gt; 25

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			20					25						30			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Leu	Leu	Ser	Xaa	Xaa	Ala	Leu	Xaa	Val	Xaa		
			35				40					45					
Leu	Xaa	Leu	Ala	Ala	Arg	Arg	Xaa	Xaa	Xaa	Arg	Tyr	Xaa	Xaa	Xaa	Xaa		
			50			55					60						
Xaa	Xaa	Xaa	Xaa	Arg	Arg	Lys	Xaa	Leu	Pro	Pro	Gly	Thr	Met	Gly	Leu		
65					70					75					80		
Pro	Xaa	Leu	Gly	Glu	Thr	Leu	Gln	Phe	Leu	Lys	Xaa	Xaa	Xaa	Xaa	Xaa		
				85				90						95			
Xaa	Pro	Gly	Asp	Phe	Xaa	Lys	Glu	Arg	Val	Xaa	Xaa	Tyr	Gly	Xaa	Xaa		
			100				105						110				
Xaa	Xaa	Ile	Tyr	Lys	His	Leu	Phe	Gly	Glu	Pro	Thr	Ile	Xaa	Ser	Xaa		
			115			120						125					
Asp	Ala	Glu	Leu	Asn	Arg	Phe	Xaa	Leu	Xaa	Asn	Glu	Gly	Xaa	Lys	Leu		
			130			135					140						
Phe	Xaa	Cys	Xaa	Xaa	Pro	Ala	Ser	Xaa	Xaa	Gly	Xaa	Leu	Gly	Lys	Xaa		
145					150					155					160		
Ser	Leu	Xaa	Ala	Xaa	Xaa	Gly	Xaa	Glu	His	Lys	Arg	Met	Arg	Xaa	Leu		
				165				170						175			
Leu	Xaa	Ser	Xaa	Phe	Ser	Xaa	Xaa	Xaa	Xaa	Leu	Asp	His	Xaa	Leu	Pro		
			180				185						190				
Xaa	Ile	Asp	Arg	Xaa	Val	Arg	Ser	Xaa	Leu	Xaa	Xaa	Trp	Xaa	Xaa	Xaa		
			195				200						205				
Xaa	Gln	Lys	Xaa	Xaa	Ile	Val	Xaa	Xaa	Xaa	Xaa	Glu	Xaa	Lys	Lys	Met		
			210			215					220						
Thr	Phe	Asp	Xaa	Xaa	Xaa	Lys	Xaa	Xaa	Met	Gly	Xaa	Xaa	Pro	Xaa	Xaa		
225					230					235					240		
Glu	Xaa	Thr	Xaa	Xaa	Xaa	Xaa	Leu	Val	Xaa	Glu	Xaa	Glu	Xaa	Leu	Ile		
				245				250						255			
Lys	Gly	Leu	Phe	Ser	Leu	Pro	Ile	Asn	Leu	Pro	Xaa	Thr	Ala	Tyr	Xaa		
			260				265						270				
Lys	Ala	Leu	Xaa	Ala	Arg	Ala	Phe	Xaa	Xaa	Ala	Xaa	Leu	Glu	Xaa	Xaa		
			275			280						285					
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Ile	Xaa	Glu	Xaa	Arg	Xaa	Glu	Glu		
			290			295				300							
Glu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
305					310					315							320

1

3

9

9

9

<400> 26  
Pro Phe Gly Xaa Gly Arg Arg Xaa Cys Xaa Gly  
1 5 10



<210> 27  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Heme binding domain

<400> 27  
 Pro Phe Gly Gly Phe Pro Arg Leu Cys Pro Gly Lys Glu Leu  
 1 5 10

<210> 28  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Signature sequence

<221> VARIANT  
 <222> 1,13,15,16  
 <223> Xaa = Any Amino Acid

<400> 28  
 Xaa Leu Leu Phe Ala Gly His Glu Thr Thr Ser Ser Xaa Ile Xaa Xaa  
 1 5 10 15  
 Ala

<210> 29  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Exemplary sequence

<400> 29  
 Pro Phe Gly Gly Gly Pro Arg Leu Cys Ala Gly  
 1 5 10

<210> 30  
 <211> 6  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 30  
 Ala Gly His Glu Thr Ser  
 1 5